Demo Starwars 2021

Projet pour démontrer quelques fonctionnalités de Unity :

Scripts pour présentation TP4

Roll a ball

- Roll a ball est un petit jeu qui permet d'apprendre d'autres fonctionnalités :
  - gérer les input pour contrôler le mouvement un objet,
  - attacher la caméra à cet objet pour le suivre
  - détecter les collisions et y associer une action
  - Gérer et afficher un score
- Online tutorial : https://learn.unity.com/project/roll-a-ball
- Ce qui est intéressant, c'est non pas d'utiliser un keyboard mais l'orientation du smartphone, pour cela, il suffit récupérer l'accélération. Voici un script permettant de gérer le clavier et l'accélération avec smartphone (à vérifier qu'il fonctionne toujours, sinon dites-moi svp)

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class PlayerController : MonoBehaviour
{
    private Rigidbody rb;

    public float speed;

    // Start is called before the first frame update
    void Start()
    {
        rb = GetComponent<Rigidbody>();
    }

    void FixedUpdate()
    {
        if (SystemInfo.deviceType == DeviceType.Desktop)
        {
            float moveHorizontal = Input.GetAxis("Horizontal");
            float moveVertical = Input.GetAxis("Vertical");
            Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
            rb.AddForce(movement * speed);
        }
        else
        {
            float moveHorizontal = Input.acceleration.x;
            float moveVertical = Input.acceleration.y;
            Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
            rb.AddForce(movement * speed);
        }
    }
}
```

- Création/destruction d'un gameObjet

```
using UnityEngine;
using System.Collections;
using System.Collections.Generic;

public class MyGameObjet : MonoBehaviour
{


    // Use this for initialization
```

```
    void Update()
    {

        if (Input.GetKey(KeyCode.Space))
        {
            gameObject.SetActive(false);
            //Destroy(gameObject);
        }

        //transform.Translate(Vector3.left);

    }

    void OnMouseDown()
    {
        Debug.Log("Vous avez cliqué !");

        float r = Random.Range(0f, 1f);
        float g = Random.Range(0f, 1f);
        float b = Random.Range(0f, 1f);
        Color randomColour = new Color(r, g, b, 1f);

        GetComponent<Renderer>().material.color = randomColour;
    }

}
```

- Animation

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
public class rotator : MonoBehaviour {

  // Update is called once per frame
  void Update () {
    transform.Rotate(new Vector3(15, 30, 45) * Time.deltaTime);
  }
}
```

- Phtsique, collision des objets (Trigger et tag)

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.SceneManagement;

public class PlayerController : MonoBehaviour
{
    private Rigidbody rb;
    public int speed = 10;
    private int count;

    // Use this for initialization
    void Start()
    {
        count = 0;
        rb = GetComponent<Rigidbody>();
    }

    // Update is called once per frame
    void FixedUpdate()
    {
        if (SystemInfo.deviceType == DeviceType.Desktop)
        {
            float moveHorizontal = Input.GetAxis("Horizontal");
            float moveVertical = Input.GetAxis("Vertical");
```

```
            Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
            rb.AddForce(movement * speed);
        }
        else
        {
            float moveHorizontal = Input.acceleration.x;
            float moveVertical = Input.acceleration.y;
            Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
            rb.AddForce(movement * speed);
        }
    }

    void OnTriggerEnter(Collider other)
    {
        if (other.gameObject.tag == "cubeBonus")
        {
            other.gameObject.SetActive(false);
            count = count + 1;
        }

        else if (other.gameObject.tag == "mechant")
        {
            SceneManager.LoadScene(0);
        }
    }
}
```

- Ajout d'un texte dans GUI pour afficher score et résultat

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.SceneManagement;
using UnityEngine.UI;

public class PlayerController : MonoBehaviour
{
    private Rigidbody rb;
    public int speed = 10;
    private int count;
    public Text countText;
    public Text winText;

    // Use this for initialization
    void Start()
    {
        count = 0;
        rb = GetComponent<Rigidbody>();
        SetCountText();
        winText.text = "";
    }

    // Update is called once per frame
    void FixedUpdate()
    {
        if (SystemInfo.deviceType == DeviceType.Desktop)
        {
            float moveHorizontal = Input.GetAxis("Horizontal");
            float moveVertical = Input.GetAxis("Vertical");
            Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
            rb.AddForce(movement * speed);
        }
        else
        {
            float moveHorizontal = Input.acceleration.x;
            float moveVertical = Input.acceleration.y;
            Vector3 movement = new Vector3(moveHorizontal, 0.0f, moveVertical);
            rb.AddForce(movement * speed);
        }
    }
```

```
    void OnTriggerEnter(Collider other)
    {
        if (other.gameObject.tag == "cubeBonus")
        {
            other.gameObject.SetActive(false);
            count = count + 1;
            SetCountText();
        }

        else if (other.gameObject.tag == "mechant")
        {
            SceneManager.LoadScene(0);
        }
    }

    void SetCountText()
    {
        countText.text = "Cubes : " + count.ToString();

        if (count >= 1)
        {
            winText.text = "Vous avez gagné !";
        }
    }

}
```